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The Improvement of Cornwall by Sea sand, communicated by an Intelligent Gentleman well acquainted in those parts to Dr. Dan. Cox.

• **T**IS well known, that *Lands* are valued according to the nearness or distance of that commodity. Near the Sea, or a navigable River are few of those waste and unimproved Lands. I have much wondred, that the Sea-sand (being so advantagious) has not been used in other parts of the Nation. I know, there is the same *shelly* sand on most of the Coasts of *England*, yet it lies wholly neglected. The reason of it is (I think) that the *Labouring part* do seldom travel, or remove, so as to learn by others experience: And the *Gentry*, that ride abroad, do little mind these things. However, since our Country has the happy use of it, and would abundantly more, were it not for the charge of carriage; I think it expedient to enlarge upon this head. *Tinn*, and *Fish*, are two noble Staples of the County, and this of *Sea-sand* (if I mistake not) may be so ordred as to be as good as either.

Now because this discourse may come to the hands of some other Country men, to whom it may do good; I shall for their sakes describe this Sand, to make them esteem and use it (if they please) for their own advantage.

This Sand is that which is commonly at or near the Sea-shoar, which to distinguish from what is useles; know, That the wash of the Sea rolls and rumbles stones & *shells*, &c. one over another, whose grating makes this Sand. If the matter be *shelly* (as we call it) that is the grating of *stones*, it is of small valew. But if it be notably *shelly*, then it is what we desire. And of this *shelly Sand* are three colours in our County. About *Plymouth* and the Southern coast the Sand is *blewish* or *gray*, like *ashes*: which I conceive to be from the breaking of *Muscles* chiefly and *Oyster-shells* mixed with it. Westward near the Lands end, the Sand is very *white*, and in *Scilly*, *glistening*. This I think comes from the mouldring of *Moorestones*, or a kind of *Free-stone* mingled with very white *shells*, such as are called (when the fish is preserved) *Scollops*. On the North-sea from about *Padstow* and Eastwards to *Lundie* the Sand is rich and of a *brown-reddish-yellowish* colour, and is mostly of the broken shells of *Cockles*; which I guess to be of that colour there, from the wash of the *Severn*, which falls very dirty into the *Severn-sea*, and perhaps that accretion of the *shells* may be tinged thereby. This we know, that though there be little or no Sea-fish near the mouth of the *Severn*, because of the muddiness thereof, and therefore fish is carried to be sold as far

as from *Loos* on the South-sea to *Barnstable* on the North; yet lower down in the North sea, though there be not so much, yet that, which is, is fatter and better then what is taken in the South-sea.

Now besides these *colours* of Sands there is also a difference in the *greatness* and *smallness* of the grain. Even in the same Harbour of *Plymouth* in some Coves 'tis very small, in others greater grain'd; and is used variously for divers purposes. 'Tis said, that the *small* is best for the *Tenant* who only takes to tillage for 4 years, because it works sooner and yields its speedy return. The *larger* grain'd (they say) is better for the *Landlord*, and the Land: because it abides longer in the ground, and makes the pasture afterwards the better.

In *Falmouth* haven near St. *Mause*-castle there is a sort of Sand or rather *Coralline*, that lies a foot under the *Ouse*, which *Ouse* being removed and the bed opened, this Sand is taken up by a dredg, and is used about *Truroe*, *Probus*, &c.

West of the Mount in *Portcuthnoe*-cove is a *large shelly* Sand. In *Whitsand-bay* and about St. *Ives*, it is very white and small.

About *Minver*, *Perinsand*, and *Lelant*, the Sands are *blown up* by the wind, and drown abundance of good Land; some Houses, yea and some Churches and Chappels are even buried with it. So that the Hills sides that are towards the Sea, may be thought like those sandy desarts we read of in *Arabia*, nor has any Art been hitherto thought of, to prevent its devastation.

Now of all those Sands the *best* are accounted, as to *colour*, first the *reddish*, next the *blew*, then the *white*. As to *kinds*, the most *shelly* and the *coralline* are best: And that which is taken up from *under the Salt-water* either by dredges, or being left open by the ebbing of the Tyde. The *blown Sand* is accounted of *no use*. And generally if Sand be well drained of the Salt-water, so that it may be more conveniently carried, 'tis better than that which has layn long drying in the Sun and Wind, which take off much of its vertue.

These useful Sands are *carried by Lighters* as far up into the Country as the Tydes will serve to that purpose, and there they are cast on shoar; from whence they are fetched in some places by *wheels*, but in most (by reason of the hilliness, narrowness, and badness of the ways) on *Horsback*; one Horse carrying about 13 or 14 gallons. Seven or eight of these horses tail'd together are call'd a *train*, which one man drives to 9 or 10 miles from the Sand-place, where each feime (or horf-load) with the carriage comes to about 8 *d.* or 9 *d.* in some places, though not so much in others: for where it is dredged

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out of the Sea, it costs 12 or 13 s. the Lighter (containing sixscore seime) at the landing Key, or Sand-place : But where it is loaded from the dry beach after the ebb, it is not above 4 s. the Lighter ; and all this charge of Lighterage is besides the land carriage. This land carriage I have computed to amount, in the whole County, to about 32000 *l. per annum.*

When this Sand is brought home, it is spread on the ground intended for wheat, or usually in the *first crop* of 4, whatever be the grain. For after 4 crops 'tis our custom to leave our land to pasture for 6 or 7 years before we Till it again. And indeed the grafs will be so good immediately after Tillage, that we commonly mow it the first year. This is call'd *mowing of gratten.*

The *Cornishaker* is 8 score yards of 18 foot to the yard; in one of which akers good husbands bestow according to the nearness or distance. Near the Sand 300 sacks (that is horse-seime or burthen:) Where men go 3 turn a day, about 200. Where 2 turn, 150. And where but 1 turn, 80 or 100. And so proportionably in greater distance, even to 20 or 30 sacks in an aker, rather than none.

The effect is usually, where *much sand* is used, the *seed is much*, and the *straw* little. I have seen in such a place good Barley where the ear has been even equal in length with the stalk it grew on : So that the saying [*a bushel of corn to a peck of straw*] is not altogether incredible. But where *less Sand* is used, there is much straw, and but *little*, and that *hungry* grain.

After the Corn is off, the grafs becomes mostly a *white Clover*, with some *purple*, if the land be deeper. And this grafs of well sand-ed ground, though it be but *short*, yet as to *feeding*, giving good *creams*, plenty of milk, and all other good purposes, it far *exceeds* the *longer* grafs, where less Sand is used. Yea garden herbs, and fruits, in those places, are more, and those better in their kind. In those well sand-ed places also little or *no snow lies* ; there is a continual *winter spring* ; an *early harvest*, (a month or 6 weeks before what is within 6 or 7 miles of the place ;) yea such a vast *difference of the air* is found in so little a distance, that a man may in an afternoon Travel as it were out of *Spain* into the *Orchades*.

Now for the benefits of Sand, found by long experience, the poor Country man is at a vast charge and trouble for the procuring of it, as is before noted.

From this discourse of Sand and our experience of it I may draw these *corollaries*.

1. It may be worth while for some ingenious *Chymist*, to open the body of *Sand*, thereby to discern its several principles, that are most prevalent : And then for some good *Naturalist*, to consider how it becomes so advantageous to *Vegetation*, and especially as to that part which concerns the *prolific Seed*.

2. It may be also worth while for some ingenious *Husbandmen* or *Gardner*, to make some tryal of Sea-sand, if it will not some way answer expectation in these Eastern parts. For their encouragement,

1. There is *Sand* (not much unlike our *Plymouth* sand) which is taken up in the *Thames* about *Erith*, made use of by Brick-makers, and brought to them by Lighters at reasonable rates.

2. A Brickmaker told me, that by the *sides of his Sand heap* the grass did *better spring* than elsewhere, and turned to a *clover-grass*.

3. In our Country we have almost *all kinds of Soyles*, and *Sand agrees* very well with *each* of them : And therefore the conceit of a diversity of Soyle, and another nature of the ground, may be no discouragement.

4. 'Tis well known, that *Sandwich Carrots and Pease* are well esteemed, and they grow there, where the Sea-sand has a little over-blown and mixed with the Soyle.

3. If you find this do any good, the *Thames* may be searched where is Ouse about *Blackwall* or a little lower, by removing about a foot of the mudd, to see if there be not some *beds of shelly substance* or *Coralline* under it, as it is in the mouth of *Falmouth*; and if such stuff may be found, it may be cheaper than what is farther fetched, and may do well.

4. But especially *our Country men* who are satisfied in the experience of it, should seriously bethink themselves, If there may not be an *easier* and *cheaper* way of *Conveyance*, for a greater quantity thereof to be brought up into the middle of the Country. And that is the next thing we shall speak something to, &c.

I. HERMETIS ÆGYPTIORUM & CHEMICORUM SAPIENTIA, ab Hermanni Conringii Animadversionibus vindicata per Olaus Borrichium, Hafniæ, A. 1674 in 4^o.

THE learned Author of this Vindication begins his Book with shewing against his famous Antagonist, that the *Ægyptian Hermes*, as an excellent Man, a great Physician & Chymist, hath deserv'd of all Mankind, and consequently is highly injured by *Conringius* his Detractions. In this part the Reader will meet with store
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